

CLAIMS

1. A process for purification treatment of wastewater containing an organic substance, which comprises subjecting the wastewater containing an organic substance to treatment complementary to supercritical treatment or
5 subcritical treatment, and then purifying the wastewater by treatment including supercritical treatment or subcritical treatment.
2. The purification treatment process according to claim 1, wherein the complementary treatment is at least one physical treatment selected from
10 separation treatment with a flocculant, sedimentation treatment, flotation treatment and filtration treatment.
3. The purification treatment process according to claim 1, wherein the complementary treatment is at least one chemical treatment selected from
15 oxidation reduction treatment, microwave treatment and treatment with an inorganic substance.
4. The purification treatment process according to claim 3, wherein the oxidation reduction treatment is electrolytic treatment.
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5. The purification treatment process according to claim 3, wherein the supercritical treatment or subcritical treatment and the treatment with an inorganic substance are carried out at the same time.
- 25 6. The purification treatment process according to claim 3, wherein the treatment with an inorganic substance is carried out after the supercritical

treatment or subcritical treatment.

7. The purification treatment process according to claim 3, 5 or 6, wherein the microwave treatment and the treatment with an inorganic substance are carried out at the same time.
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8. The purification treatment process according to claim 4, wherein, in order to carry out the electrolytic treatment, the wastewater containing an organic substance is supplied to an electrolytic cell equipped with aluminum electrodes, and sodium nitrate is used as an electrolyte.
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9. The purification treatment process according to claim 5, 6 or 7, wherein the inorganic substance is at least one inorganic compound selected from $12\text{CaO} \cdot 7\text{Al}_2\text{O}_3$, an alkaline earth metal oxide and an alkaline earth metal hydroxide.
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10. The purification treatment process according to claim 5, 6, 7 or 9, wherein heating is carried out.
- 20 11. The purification treatment process according to claim 10, wherein the microwave treatment is carried out in the presence of an inorganic substance.
12. A process for purification treatment of wastewater containing an organic substance, which comprises subjecting the wastewater containing an organic substance to treatment complementary to supercritical treatment or
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subcritical treatment, and then treating the wastewater supercritically or subcritically, and subsequently purifying the wastewater by treatment including biological treatment.

- 5 13. The purification treatment process according to claim 12, wherein the complementary treatment is at least one treatment selected from separation treatment with a flocculant, sedimentation treatment, flotation treatment and filtration treatment.
- 10 14. The purification treatment process according to claim 12, wherein the complementary treatment is at least one treatment selected from oxidation reduction treatment, microwave treatment and treatment with an inorganic substance.
- 15 15. The purification treatment process according to claim 14, wherein the supercritical treatment or subcritical treatment and the treatment with an inorganic substance are carried out at the same time.
- 20 16. The purification treatment process according to claim 14, wherein the treatment with an inorganic substance is carried out after the supercritical treatment or subcritical treatment.
- 25 17. A process for purification treatment of wastewater containing an organic substance, which comprises treating the wastewater containing an organic substance biologically, and then purifying the wastewater by treatment including supercritical treatment or subcritical treatment.

18. The purification treatment process according to claim 17, wherein solid-liquid separation treatment is carried out prior to the biological treatment.

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19. The purification treatment process according to claim 18, wherein the solid-liquid separation treatment is at least one treatment selected from separation treatment with a flocculant, sedimentation treatment, flotation treatment and filtration treatment.

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20. The purification treatment process according to claim 18 or 19, wherein intermediate treatment for promoting the biological treatment and/or the supercritical treatment or subcritical treatment is carried out between the solid-liquid separation treatment and the biological treatment.

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21. The purification treatment process according to claim 20, wherein the intermediate treatment is at least one treatment selected from oxidation reduction treatment, microwave treatment and treatment with an inorganic substance.

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22. The purification treatment process according to any of claims 17 to 21, wherein the treatment with an inorganic substance is carried out between the biological treatment and the supercritical treatment or subcritical treatment.